07/21/2017 18:00 UTC

The following graphs represent the coordinated launch for Langley Research Center (LaRC; 37.1024, -76.3929) and the Chesapeake Bay Bridge Tunnel 3rd Island (CBBT; 37.0366, -76.0767) on 07/21/2017 at approximately 18:00 UTC

Wind at both sites came generally from the southwest. Preliminary analysis suggests a probable boundary layer around 1600 m at LaRC and 1400 m at CBBT. Potential temperature profiles show largest divergence between sites in the first 800 m, with CBBT having lower potential temperature (maximum difference of about 3 K). CBBT had a relatively moderate drop in potential temperature in the first 200 m compared to LaRC. Potential temperature profile was in very close agreement between CBBT and LaRC from 900 m to 5000 m with maximum difference of 1 K.

Preliminary observations suggest some potentially interesting differences in ozone mixing ratio profiles above CBBT and LaRC with some similarities in the profile. CBBT and LaRC appear to have had similar surface ozone mixing ratios. CBBT ozone mixing ratio decreased to 55 ppbv around 800 m, a difference of almost 20 ppbv above Larc at the same altitude. CBBT ozone mixing ratio then increased to values similar to LaRC at 1000 m, where the profiles both decreased to about 55 ppbv around 1100 m. Ozone mixing ratio above both CBBT and LaRC appears to have generally fluctuated around 60 ppbv from 1100 m to 3500 m.

From 3500 m to 5000 m ozone mixing ratio at LaRC appears to have experienced several ozone layers increasing, decreasing, and then greatly increasing with height. The change from 55 ppbv at 4100 m to 85 ppbv at 4500 m for LaRC is notable. CBBT profile between 3500 m and 4500 m appears generally uniform, followed by a notable 20 ppbv increase between 4300 m and 4900 m.

PLEASE NOTE: This data is preliminary and should not be used for official business until certified by NASA technical staff.

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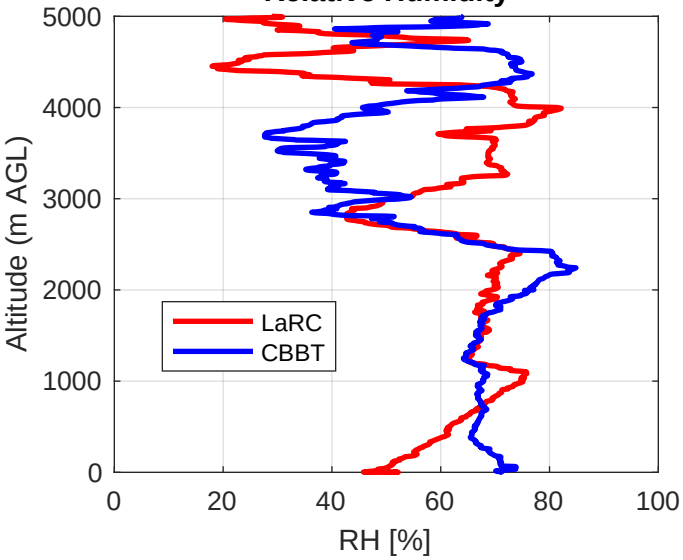
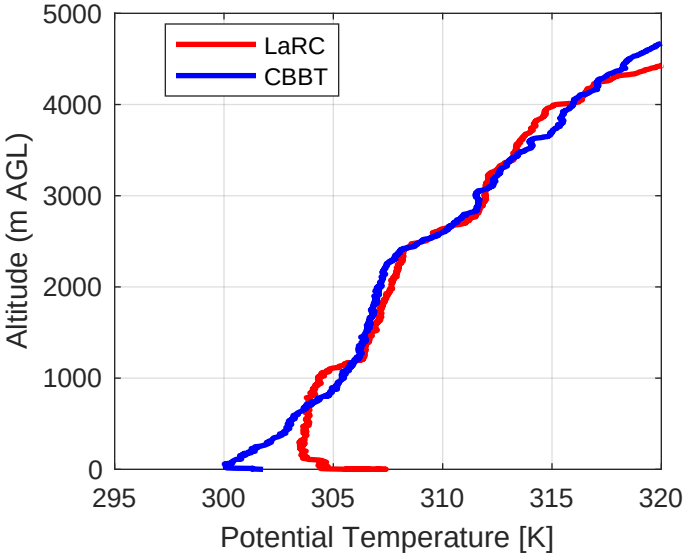
CBBT Sonde POC: Travis Knepp (travis.n.knepp@nasa.gov)

Sonde Data: 07/21/2017 18:15 UTC (LaRC) and 17:59 UTC (CBBT)

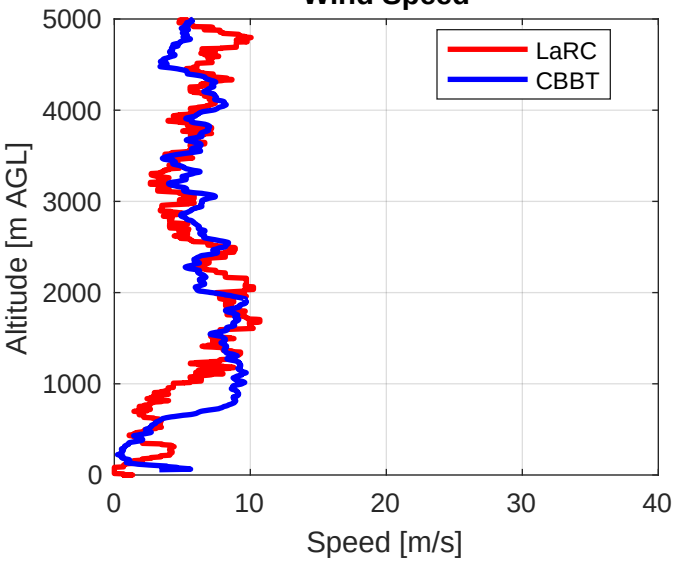
Relative Humidity



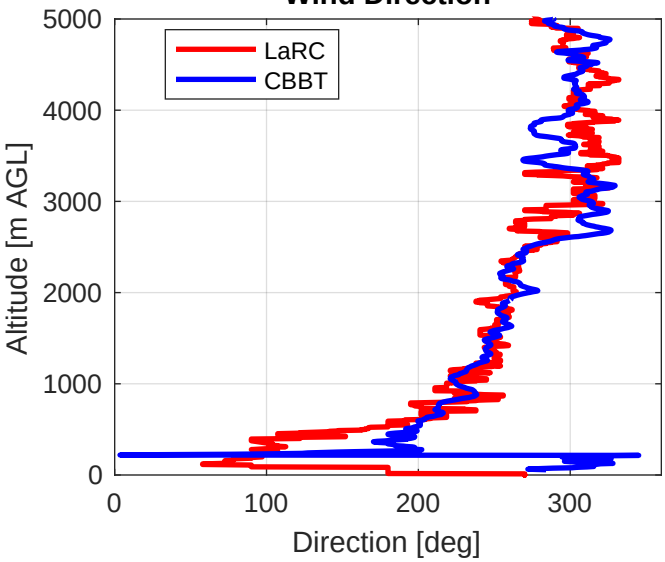
Theta



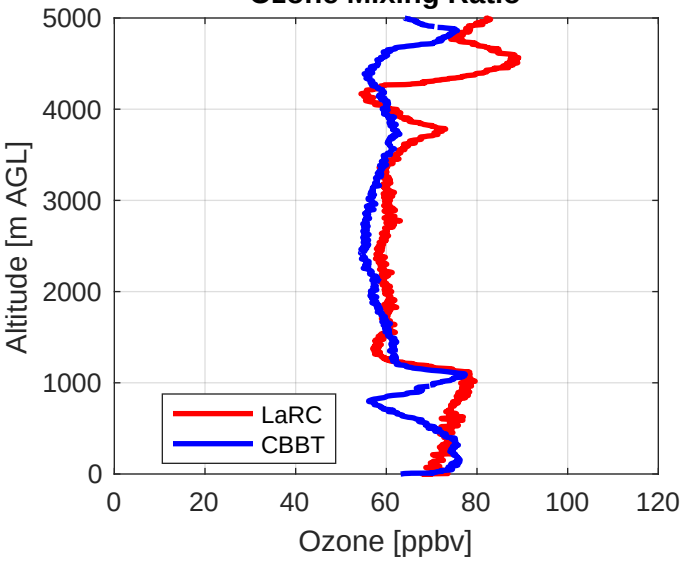
Wind Speed



Wind Direction



Ozone Mixing Ratio



Ozonesonde Map [ppbv]